Hawaii Coral Reef Initiative
Research Program





Past Projects

Please visit our website for a full list of past projects, reports, and results.

www.hcri.hawaii.edu

FY04 Projects

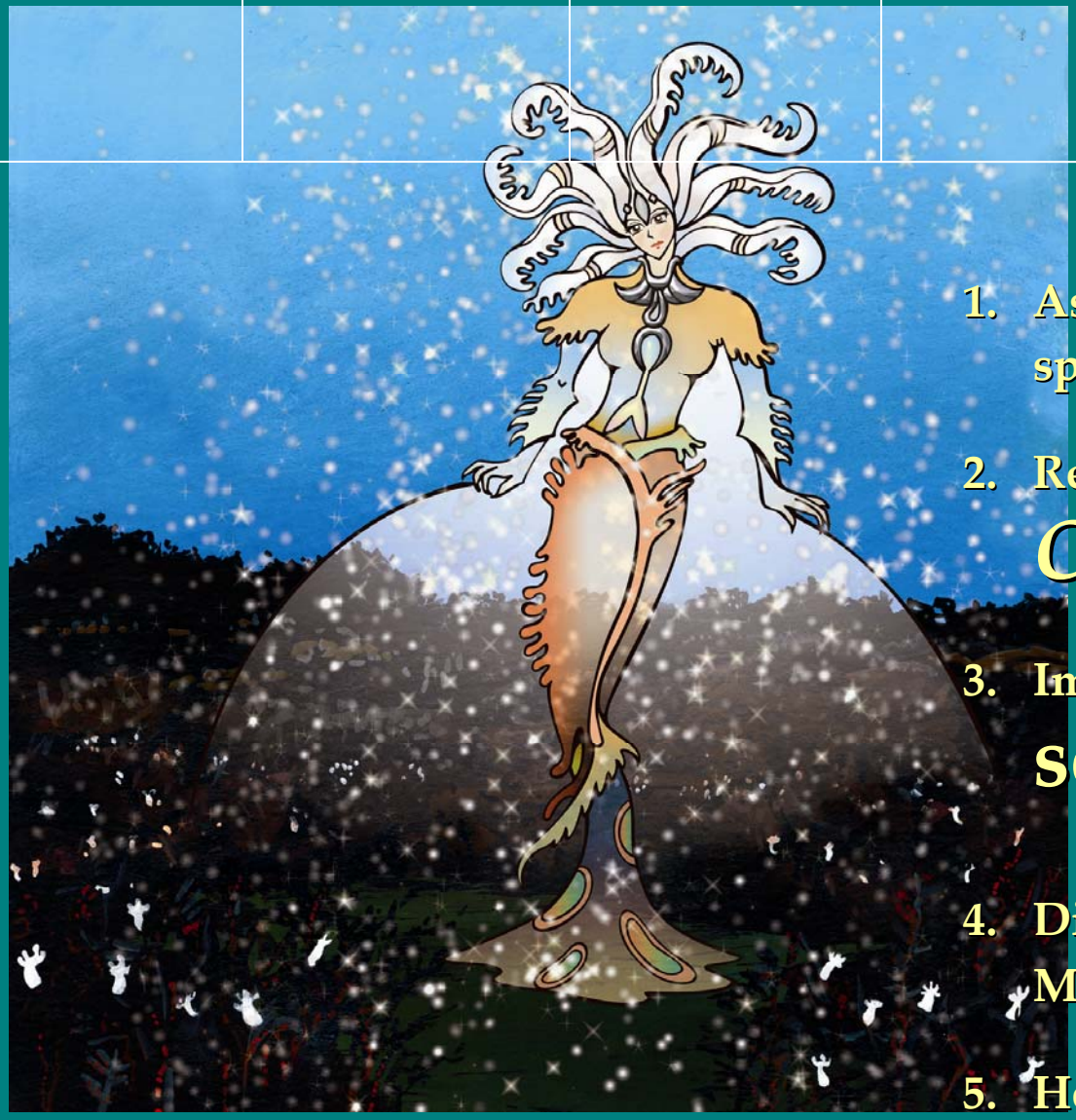
Non-economic value of Hawaii's coral reefs.

PI: B. Ankersmit

Most popular activities for Hawaii's households

N = 1600

- Wading or walking on beach (68%)
- Ocean swimming (66%)
- Picnicking, sunbathing, beach sports (64%)
- Playing in the ocean (58%)
- Snorkeling (32%)
- Surfing (29%)
- Pole-line fishing for recreation (26%)



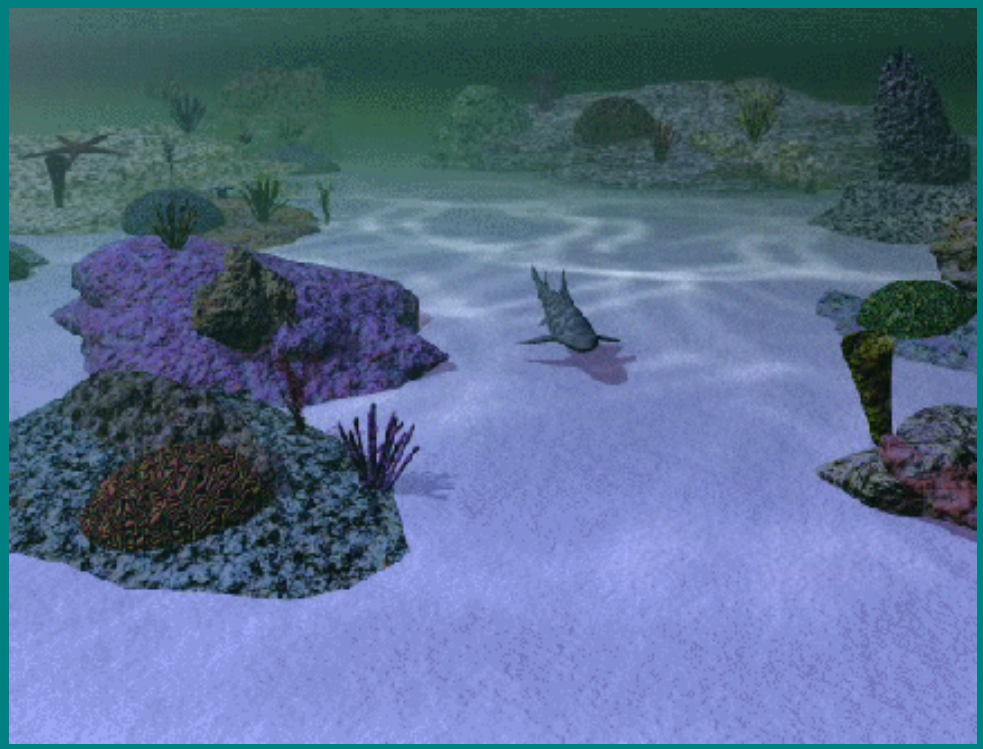
Alien and Invasive Species

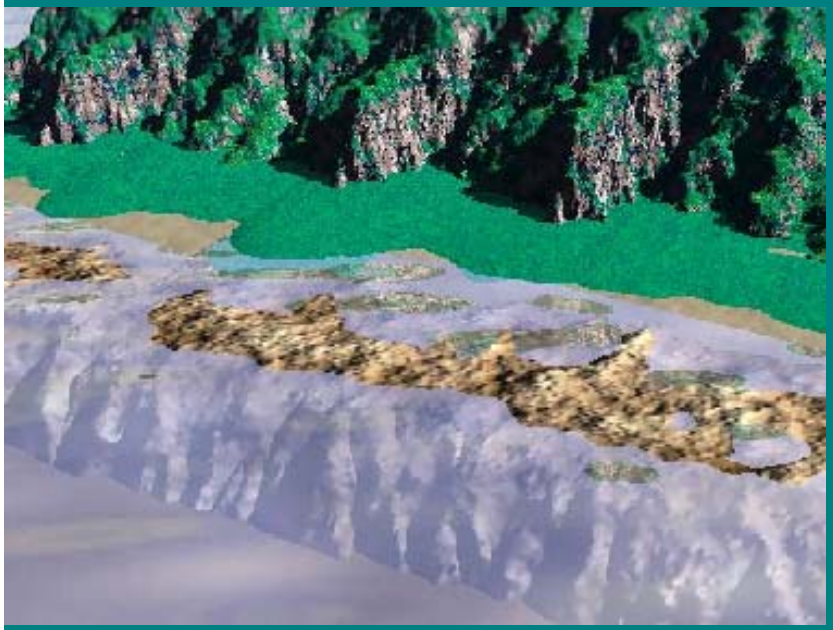
1. Assessment of Orange **keyhole** sponge in Kaneohe Bay (PI: S. Coles)
2. Reproduction & development of ***Carijoa*** (PI: R. Toonen)
3. Impacts of alien algae on native **seagrasses** (PI: C. Smith)
4. Disease in coral and reef **fish** on Maui (PI: T. Work & G. Aeby)
5. How many fish does it take to keep **out** alien algae? (PI: C. Birkeland)

Integrated monitoring of coral reefs (PI: I. Williams)

Status of Coastal Reefs surrounding the main Hawaiian Islands

“Gaming” the main Hawaiian Islands’ Coastal Reefs

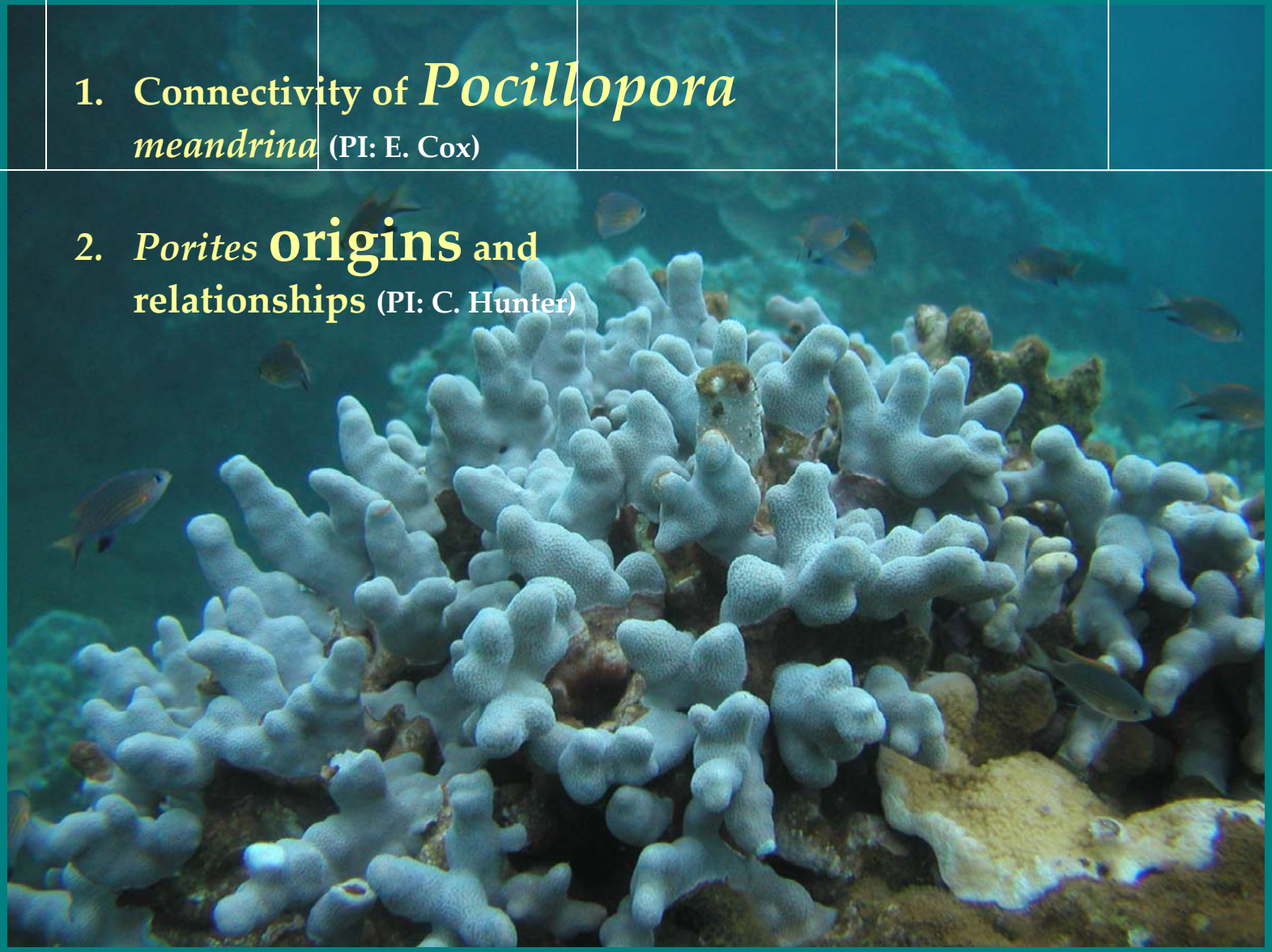




ReefRanger (PI: J. McManus)

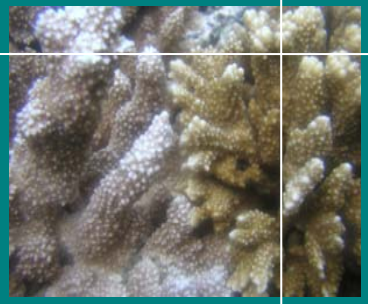
1. Connectivity of *Pocillopora meandrina* (PI: E. Cox)

2. *Porites* **origins** and relationships (PI: C. Hunter)



Population Dynamics of Coastal Reefs surrounding the main Hawaiian Islands

FY2005 Priorities



Non-economic value of the main Hawaiian Islands' coastal reefs.

Build upon the 2004-2005 statewide random sample household survey and focus groups.

How do Hawaii's reefs enhance our quality of life?

Stressors of Coastal Reefs

surrounding the main Hawaiian Islands

- Understand the effects of invasive marine plants and animals on native species and reef ecosystems
- Develop methods for preventing the introduction and spread of new invasive marine species, through hull fouling and other means.
- Recommend management activities to avoid or minimize impacts.

Alien Species

- Can no-take marine protected areas alone, assist in restoring reef fisheries?
- Can the minimal use of certain gear types result in an increase in fisheries?

- A reference that combines information on times and locations of species spawning, or critical locations of recruitment, etc., may aid managers in assessing the impact of uses in our marine environment.

- How much fishing effort can Hawaii's aquatic resources withstand?

- Is there a relationship between fishing pressure and other factors that may influence overall resource populations' health?

Fishing Pressure

Pollution

Examine how pollution affects Hawaii's nearshore reefs. Make practical management recommendations to prevent marine pollution that negatively impacts coastal reef ecosystems. Selected projects would recommend management activities to avoid, minimize and mitigate negative impacts

What is the prevalence and incidence of disease?

Can disease be readily classified and illustrated?

What are the linkages between anthropogenic stressors and disease?

Is there variation in susceptibility to disease?

Disease

Discuss how the identified ecological functions may be vulnerable to anthropogenic influences

.

.

Identify, describe and spatially illustrate coral reef ecological functions throughout the Main Hawaiian Islands

Make recommendations for management solutions

Coastal

Development

Fishing

Snorkeling

Surfing

Nearshore Recreation

Kayaking

Scuba Diving

Swimming

Evaluate the value of nearshore recreation. Quantify its impacts. Recommend ways to improve marine recreation management so that these activities will not degrade Hawaii's marine ecosystems.

What is a useable model, approach, or system that could indicate to managers when there is too much impact for an areas?

Is there a practical method to determine the levels of use and the impacts from that use?

What recommendations can be given to resource managers?

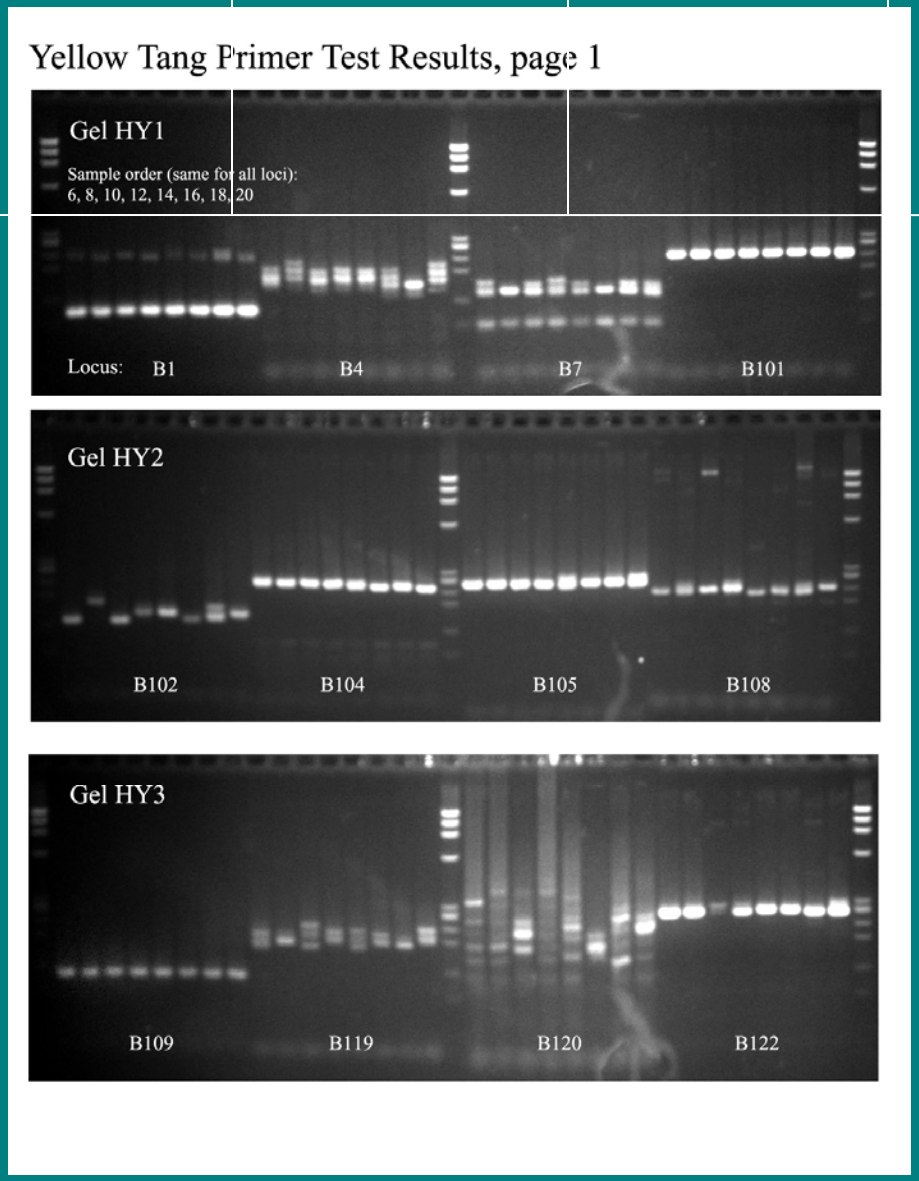
- Resource assessments and monitoring are crucial to understanding the health of coral reef ecosystems. HCRI-RP is soliciting proposals for question-driven monitoring and assessment of Hawaii's coral reef ecosystems.

- Any sites proposed for monitoring under this program should be selected based on a strategy to distinguish the effects of natural variability versus anthropogenic impacts. Impacts induced by global climate change are not a priority unless they can be related directly to local management decisions.

Status of Coastal Reefs surrounding the main Hawaiian Islands

“Gaming” the main Hawaiian Islands’ Coastal Reefs

(1) become familiar with coral reef ecology;
(2) gain insight into the life history of certain keystone marine organisms and better understand the specific roles they play and contributions they make towards maintaining equilibrium on a coral reef;
(3) better understand the relationships between various trophic levels on a coral reef; and
(4) manipulate variables (natural and anthropogenic) that would alter the health of a coral reef ecosystem



What are important coral reef keystone organisms around the main Hawaiian Islands and how do they contribute to the health of coral reef ecosystems?

Are the populations of these organisms genetically distinct or a single population? What links exist between the life histories, reproductive patterns and genetic structures for these population(s)?

What are the coastal current patterns within the Hawaiian Archipelago, and how do these affect recruitment patterns of fishes and invertebrates?

What are the effects of invasive algae on recruitment of corals and other benthic invertebrates?

Population Dynamics of Coastal Reefs surrounding the main Hawaiian Islands

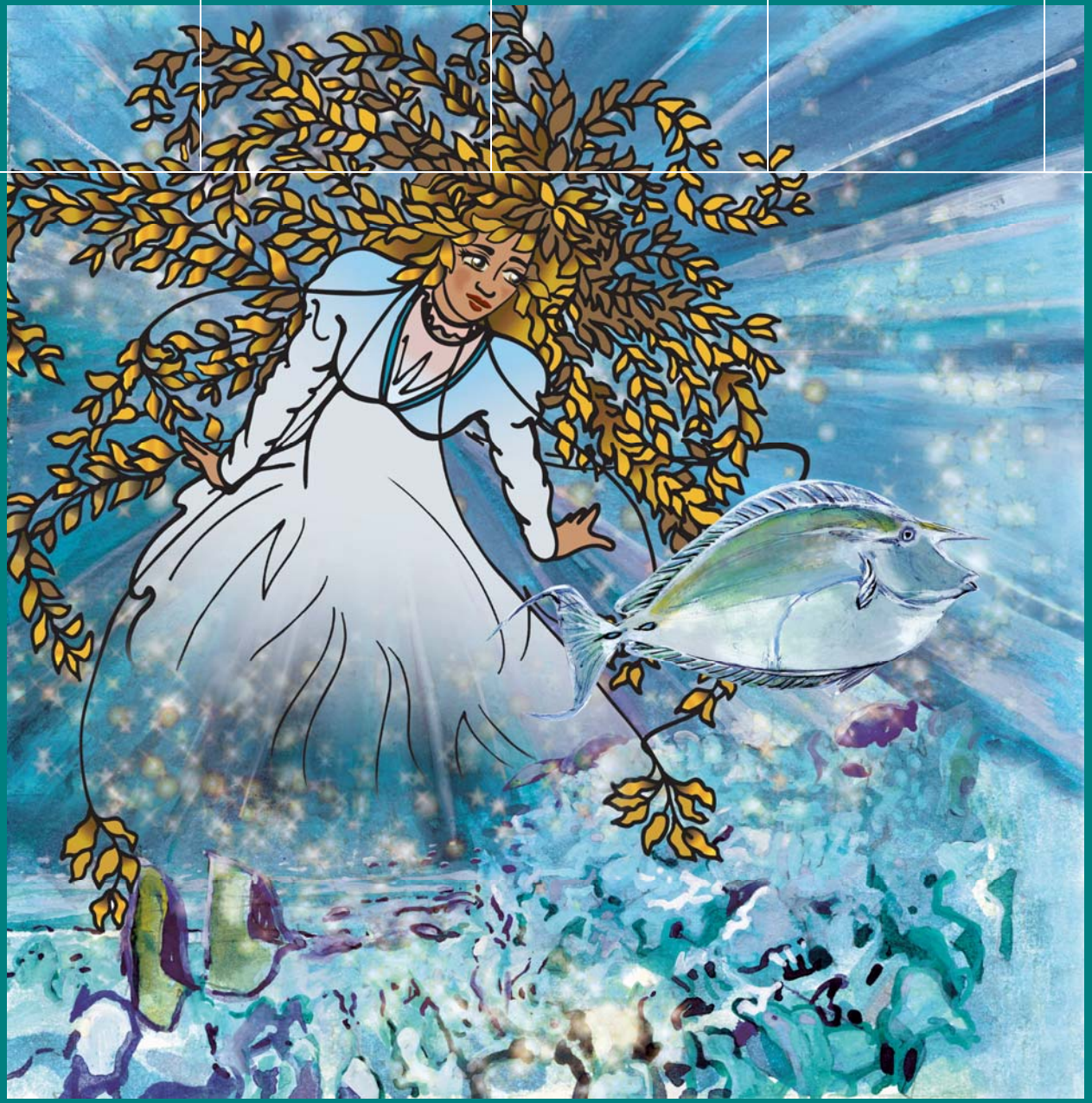
Regulatory Review

Review existing legislation and regulations and enforcement mechanisms in Hawaii.

Collect and review relevant practices in other appropriate jurisdictions.

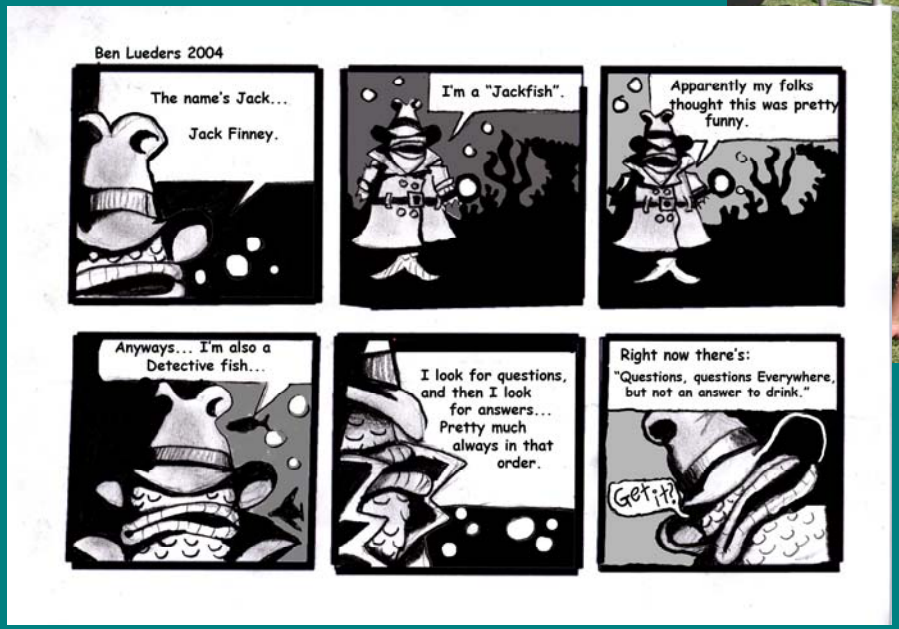
Compile relevant scientific data.

Provide options for revisions, amendments or replacement of existing regulations and enforcement mechanisms.



Produce technical documents and videos.

Participate in public outreach and education activities

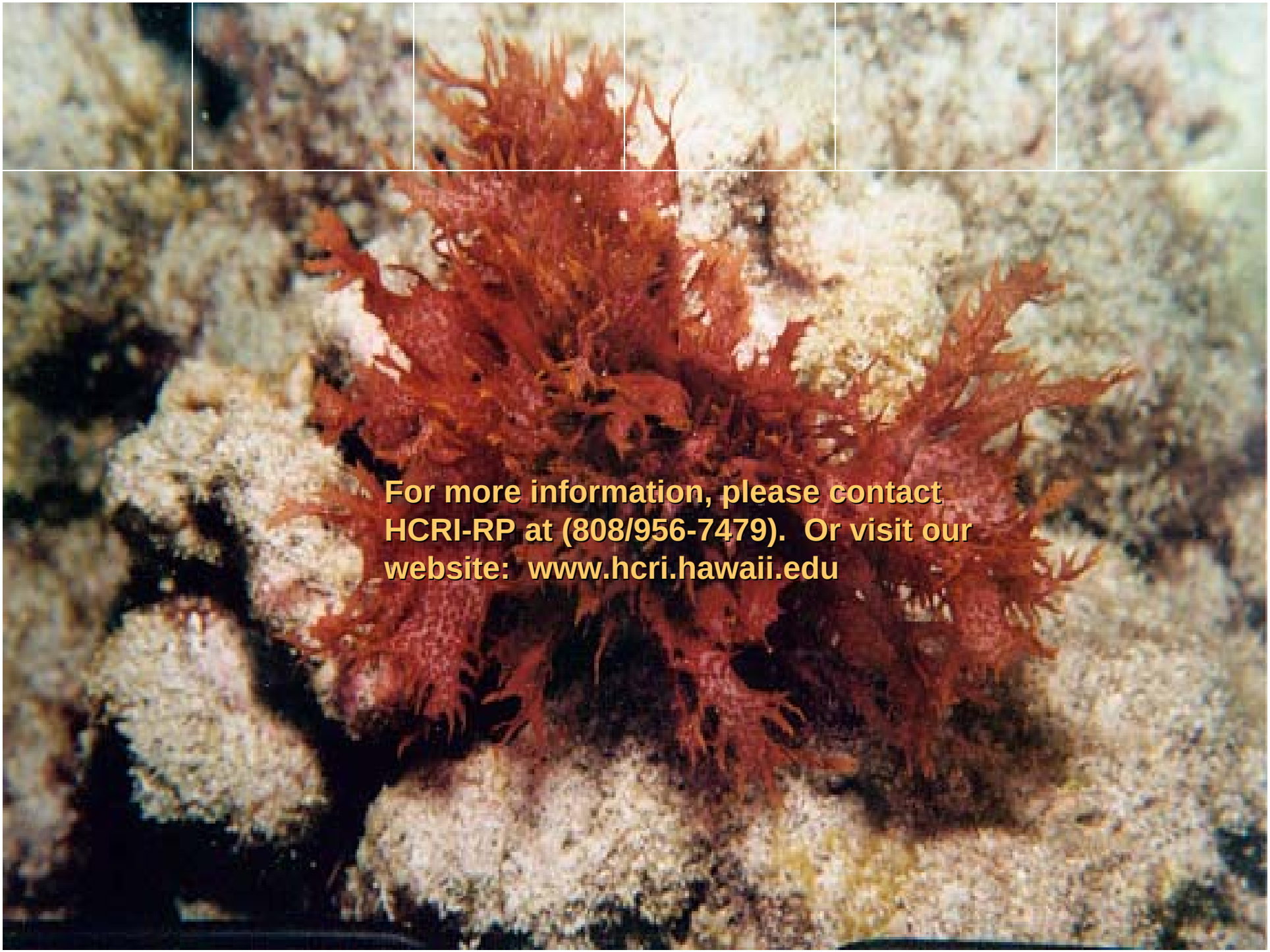


Key Dates

February 10, 2005: Optional Letters of Intent DUE, preferably electronically (hcri_rp@hawaii.edu) by 4:00 p.m. HST. **Please ensure that you have no viruses!** The file name must include the last name of the principal investigator.

February 28, 2005: Responses by the HCRI management committee to the letters of intent will be sent out.

March 28, 2005: Proposals DUE, in electronic form **and** 12 hard copies by 4:00 p.m. HST.


For more information, please contact HCRI-RP at (808/956-7479). Or visit our website: www.hcri.hawaii.edu